

# PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:  
JOHN R. BUSER  
1000 TOWN CENTER  
TWENTY-SECOND FLOOR  
SOUTHFIELD, MI 48075

CCCI 0122 PCT3

## PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL SEARCH REPORT AND  
THE WRITTEN OPINION OF THE INTERNATIONAL  
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference 2004008613	Date of mailing (day/month/year) <b>02 SEP 2005</b>
International application No. PCT/US05/02623	International filing date (day/month/year) 31 January 2005 (31.01.2005)
Applicant HILDEBRAND, JOHN G.	Due: 11-2-05

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

**Filing of amendments and statement under Article 19:**

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

**When?** The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

**Where?** Directly to the International Bureau of WIPO, 34 chemin des Colombettes  
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☒ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereof to the designated Offices.

☒ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the PCT Applicant's Guide, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-8300	Authorized officer Ayaz R Sheikh Telephone No. 571-272-2100
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Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 2304008613	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below	
International application No PCT/US05/02623	International filing date ( <i>day/month/year</i> ) 31 January 2005 (31.01.2005)	(Earliest) Priority Date ( <i>day/month/year</i> ) 29 January 2004 (29.01.2004)
Applicant HILDEBRAND, JOHN G.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 8 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box No. II)

3. ☐ Unity of invention is lacking (See Box No. III)

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. 1



as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.



as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/02623

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 9/00

US CL : 713/100

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 713/100

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/0075954 A1 (VINCE) 20 June 2002 (20.06.2002), figure 1, figure 2	1, 3-6, 13-22, and 26
---	paragraph 0002-0004, 0018, 0020, 0027, 0029, and 0031.	2, 7-12, 23-25, and 27-28
Y	US 2002/0196939 A1 (UNGER et al) 26 December 2002 (26.12.2002), figure 2, figure 11, figure 12	2, 7-12, 23-25, and 27-28
	paragraph 0008, 0029.	

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understate the principle or theory underlying the invention
"B" earlier application or patent published on or after the international filing date	"X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"Z" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

12 August 2005 (12.08.2005)

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-8300

Date of mailing of the international search report

02 SEP 2005

Authorized officer

Ayaz R Sheikh

Telephone No. 571-272-2100

Form PCT/ISA/210 (second sheet) (January 2004)

## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
JOHN R. BUSER  
1000 TOWN CENTER  
TWENTY-SECOND FLOOR  
SOUTHFIELD, MI 48075

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis 1)

Applicant's or agent's file reference 2004008613 <b>CCC10122PCTP3</b>		Date of mailing (day/month/year) <b>02 SEP 2004</b>
FOR FURTHER ACTION See paragraph 2 below		
International application No. PCT/US05/02623	International filing date (day/month/year) 31 January 2005 (31.01.2005)	Priority date (day/month/year) 29 January 2004 (29.01.2004)
International Patent Classification (IPC) or both national classification and IPC IPC(7): G06F 9/00 and US Cl.: 713/100		
Applicant HILDEBRAND, JOHN G.		

## 1. This opinion contains indications relating to the following items.

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 55.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

## 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-8300	Authorized officer Ayaz R Sheikh Telephone No. 571-272-2100
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Form PCT/ISA/237 (cover sheet) (January 2004)

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US05/02623

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format  
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

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Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 2, 7-12 and 23-25 YES

Claims 1, 3-6, 13-22, and 26 NO

Inventive step (IS)

Claims NONE YES

Claims 1-28 NO

Industrial applicability (IA)

Claims 1-28 YES

Claims NONE NO

2. Citations and explanations:

Please See Continuation Sheet

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1, 3-6, 13-22, and 26 lack novelty under PCT Article 33(2) as being anticipated by Vince (U.S. Patent Publication No. 2002/0075954 A1).

Regarding claim 1, Vince teaches a method of supporting operation of legacy customer equipment in a system where at least a portion of the legacy customer equipment receives non-supported signals (figure 1), the method comprising:  
configuring a transcoding unit for operation with the legacy customer equipment (figure 2, reference number 10), the transcoding unit configured to transcode non-supported signals to supported signals which are compatible with the customer equipment (paragraph 0018).

Regarding claim 3, Vince teaches a method of transcoding dissimilar payloads carried in a first transport stream, the method comprising:  
demultiplexing the first transport stream to recover first and second payloads (figure 1, reference number 30);  
transcoding the second payload to a protocol associated with the first payload if a protocol associated with the second payload is dissimilar from the protocol associated with the first payload (figure 1, reference number 40/50/60); and  
multiplexing the first payload and the transcoded second payload to a second transport stream (figure 1, reference number 70).

Regarding claim 4, Vince teaches further comprising associating the first payload with MPEG-2 protocols and associating the second payload with AVC protocols such the second payload is transcoded to MPEG-2 protocols (paragraph 0001 and 0031).

Regarding claim 5, Vince teaches further comprising associating the AVC protocols with MPEG-4 protocols (paragraph 0027).

Regarding claim 6, Vince teaches further comprising associating the AVC protocols with H.264 protocols (paragraph 0027).

Regarding claim 13, Vince teaches further comprising associating the first transport stream with MPEG-2 protocols (paragraph 0003).

Regarding claim 14, Vince teaches further comprising determining if the protocol associated with the second payload is dissimilar from the protocol associated with the first payload as a function of instructions associated with the MPEG-2 protocols of the first transport stream (paragraph 0018).

Regarding claim 15, Vince teaches further comprising associating the first and second transport streams with MPEG-2 protocols (paragraph 0029).

Regarding claim 16, Vince teaches a system of providing digital television signals to a media output device, the system comprising:  
a host configured to decode signals carried in payloads of a first payload type for playback on the media output device (paragraph 0002/0003), and  
a unit configured for transcoding digital television signals carried in payloads of a second payload type to the first payload type for output to the host, the second payload type being associated with protocols dissimilar to protocols associated with the first payload type (paragraph 0018).

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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Regarding claim 17, Vince teaches wherein the host is configured to only decode signals carried in the first payload type (paragraph 0029).

Regarding claim 18, Vince teaches wherein the first payload type is associated with MPEG-2 protocols (paragraph 0003).

Regarding claim 19, Vince teaches further comprising a provider for providing the signals in a first transport stream, wherein the first transport stream carries the signals in payloads of the first and second payload types (paragraph 0004).

Regarding claim 20, Vince teaches wherein the unit includes a demultiplexer for demultiplexing the first transport stream to recover the payloads (figure 1, reference number 30); a transcoder for transcoding the second payload type to the first payload type (figure 1, reference number 10); and a multiplexer for multiplexing payloads of the first payload type with transcoded payloads of the second payload type to a second transport stream for output to the host (figure 1, reference number 70).

Regarding claim 21, Vince teaches wherein the unit includes a bypass for bypassing payloads associated with the first payload type past the transcoder to the multiplexer such that the bypassed payloads are multiplexed at the multiplexer with the transcoded payloads (figure 1, reference number 82 and 84).

Regarding claim 22, Vince teaches wherein the transcoder only transcodes payloads from the second payload type to the first payload type (paragraph 0018).

Regarding claim 26, Vince teaches a transcoding unit for use with legacy set top boxes (STBs) which only supports playback of digital television (DTV) signals encoded according to non-advance video compression (AVC) standards and not DTV signals encoded according to AVC standards (paragraph 0002-0004), the transcoding unit comprising:  
a transcoder configured to transcode DTV signals associated with the AVC standards to DTV signals associated with non-AVC standards so as to permit playback of the transcoded DTV signals with the legacy STB (paragraph 0018).

Claims 2, 7-12, 23-25, 27, and 28 lack an inventive step under PCT Article 33(3) as being obvious over Vince (U.S. Patent Publication No. 2002/0075954 A1) in view of Unger et al. (U.S. Patent Publication No. 2002/0196939 A1).

Regarding claim 2, Vince teaches all the limitations of claim 1, above. However, Vince does not teach wherein the legacy customer equipment are set top boxes (STBs) having onboard conditional access decryption capabilities and wherein the method further comprises configuring the transcoding unit to interface through a card interface of the STBs.

Unger et al. teaches wherein the legacy customer equipment are set top boxes (STBs) having onboard conditional access decryption capabilities (figure 2, reference number 36) and wherein the method further comprises configuring the transcoding unit to interface through a card interface of the STBs (paragraph 0039).

Regarding claim 7, Vince teaches all the limitations of claim 3, above. However, Vince does not teach further comprising decrypting conditional access (CA) encryption of the first transport stream prior to demultiplexing.

Unger et al. teaches further comprising decrypting conditional access (CA) encryption of the first transport stream prior to demultiplexing (figure 2, reference number 40).

Regarding claim 8, Vince as modified by Unger et al. teaches further comprising decrypting the CA encryption of the first transport stream in a set top box (STB) (see figure 2, reference number 40 within 36 of Unger et al.).

Regarding claim 9, Vince as modified by Unger et al. teaches further comprising demultiplexing, transcoding, and multiplexing the first and second payloads in a card inserted into a card slot of tile STB (see paragraph 0039 of Unger et al. and figure 2 of Vince).

Regarding claim 10, Vince as modified by Unger et al. teaches further comprising decoding copy protection of the first transport stream in the card and prior to the demultiplexing, transcoding, and multiplexing (see figure 11, reference number 604 of Unger et al.).

Regarding claim 11, Vince as modified by Unger et al. teaches further comprising encoding copy protection to the second transport stream (see paragraph 0008 of Unger et al.).

Regarding claim 12, Vince as modified by Unger et al. teaches further comprising transmitting the copy protection encoded second transport stream from the card to the STB (see paragraph 0008 of Unger et al.).

Regarding claim 23, Vince teaches all the limitations of claim 16, above. However, Vince does not teach wherein the host is a set top box (STB).

Unger et al. teaches wherein the host is a set top box (STB) (figure 2, reference number 36).



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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Regarding claim 24, Vince as modified by Unger et al. teaches wherein the unit is a card configured to insert within a slot of the STB (see paragraph 0039 of Unger et al.).

Regarding claim 25, Vince teaches all the limitations of claim 16, above. However, Vince does not teach wherein the host is a digital video recorder (DVR).

Unger et al. teaches wherein the host is a digital video recorder (DVR) (figure 12, reference number 704).

Regarding claim 27, Vince teaches all the limitation of claim 26, above. However, Vince does not teach wherein the transcoder is included with a card configured to insert within a slot of the legacy STBs and wherein the STB includes onboard conditional access decryption capabilities.

Unger et al. teaches wherein the transcoder is included with a card configured to insert within a slot of the legacy STBs and wherein the STB includes onboard conditional access decryption capabilities (figure 2, reference number 40 and paragraph 0039).

Regarding claim 28, Vince as modified by Unger et al. teaches wherein the DTV signals are carried in payloads of a first transport stream (see figure 2, reference number 100 of Vince), and wherein the transcoding unit further comprising a demultiplexer for determining whether the first transport stream includes payloads associated with the AVC standards or the non-AVC standards and to transport payloads associated with the AVC standards to the transcoder and to transport payloads associated with the non-AVC standards to a multiplexer (see figure 1, reference number 30 of Vince), wherein the transcoder transcodes the payloads associated with the AVC standards to payloads associated with the non-AVC standards and outputs the transcoded payloads the multiplexer (see figure 2, reference number 120 of Vince), and wherein the multiplexer combines the bypassed payloads with the transcoded payloads to a second transport stream for output to the legacy STB (see figure 1, reference number 70 of Vince).

Claims 1-28 meet the criteria set out in PCT Article 33(4) and thus have industrial applicability because the subject matter claimed can be made or used in industry.